



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

SR-6J

May 10, 2016

Mr. Gary D. Uphoff
Principal
Environmental Management Services Company
5934 Nicklaus Drive
Fort Collins, Colorado 80528

Subject: Old American Zinc Plant Superfund Site, Fairmont City, Illinois
Draft Final Design Report dated March 2016

Dear Mr. Uphoff:

The United States Environmental Protection Agency (EPA) has reviewed the Draft Final Design Report dated March 2016 for the Old American Zinc Plant Site in Fairmont City, Illinois. EPA's comments are enclosed.

Please submit the Final Design that incorporates all of EPA's comments within the timeframe approved in the Remedial Design Work Plan. If you have any questions or comments regarding this letter, please contact me at (312) 353-4150 or via email at desai.sheila@epa.gov.

Sincerely,

A handwritten signature in cursive script, reading "Sheila Desai", is written above the typed name.

Sheila Desai
Remedial Project Manager

Enclosure

cc: Michael Haggitt, Illinois EPA
Rachel Grand, CH2M Hill
Jennifer Mumper, Gold Fields Mining

**EPA COMMENTS ON DRAFT FINAL DESIGN REPORT
DATED MARCH 2016
OLD AMERICAN ZINC PLANT SITE
FAIRMONT CITY, ILLINOIS**

GENERAL COMMENT

1. **Electronic version:** Figures need to be fixed. Boxes are showing up instead of certain letters/numbers throughout.

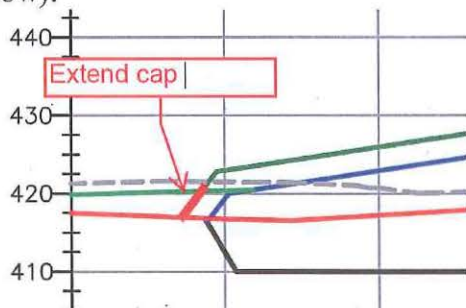
SPECIFIC COMMENTS

1. **Section 3.3:** As noted in the Remedial Investigation (RI) and Record of Decision (ROD), manganese may be influenced by upgradient sources but based on the groundwater samples taken during the Pre-Design Investigation, it appears that the site may also be contributing to manganese in the groundwater (manganese increases inside the Facility Area vs. boundary). The statement should be revised to not state that “the site is not the source of manganese in the groundwater.” It does not appear that manganese was even tested in the source materials so there is no support for that statement.
2. **Section 4.3.1:** XRF data is acceptable for field or screening level data, but will need to be verified with laboratory data.
3. **Section 4.3.2:** Text states that up to 30 inches will be removed, however, in the material calculations in Appendix B (and Section 4.3.6.1), only 24 inches was accounted for.
4. **Section 4.3.3:** The West Ditch Outfall specifics are missing from the text. This should be discussed in Section 4.3.3 with a reference to Drawing 9.
5. **Section 4.3.6.1 and 4.3.8:** If the West Ditch is removed, is the volume included in facility source materials? If so, it should be specified. It is included in the overall quantities.
6. **Figure 5, Schedule, ID 14:** Activity starts on 7/28/2017, and ends on 8/23/2018, showing a duration of 40 weeks, but it is actually 56 weeks. Other activities show similar inconsistent durations.
7. **Figure 5, Schedule:** The ROD indicated 10 months for construction, but the schedule lists 30 months. Why?
8. **Figure 5, Schedule:** The Remedial Action (RA) Schedule will need to correspond with what will be in the Consent Decree (CD). The proposed schedule does not correspond with the draft Statement of Work (SOW) of the CD. Since the schedule is contingent upon the CD, it should either be modified to correspond with what is in the Draft SOW or specifically stated that it is draft and will be contingent on the CD and finalized in the RA Work Plan.

9. **RA Work Plan Outline:** West Ditch excavation should be mentioned. Please clarify how you are addressing it, i.e. which category. Also, vacant properties are missing from the list.
10. **Quality Assurance Project Plan Outline:** The Quality Assurance Project Plan (QAPP) should be developed in accordance with *EPA Requirements for Quality Assurance Project Plans*, QA/R-5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006); *Guidance for Quality Assurance Project Plans*, QA/G-5, EPA/240/R 02/009 (Dec. 2002); and *Uniform Federal Policy for Quality Assurance Project Plans*, Parts 1-3, EPA/505/B-04/900A through 900C (Mar. 2005).
11. **O&M Plan Outline:** Residents with waste left in place and other Institutional Controls (ICs) for commercial and vacant properties need to be addressed in the O&M Plan.
12. **Institutional Control Implementation and Assurance Plan Outline:** The Plan should discuss IC implementation at off-site properties (residential, commercial/industrial, and vacant) where contamination is left at the property.

APPENDIX A COMMENTS

1. Drawings do not have enough detail on them to allow construction.
Please provide:
Survey Control
Staging and stockpile areas
Erosion Control
Control points for excavation and fill
Site Wide cross sections
Removal areas within Rose Creek – while a line on a drawing shows the extent, the detail shows that the width of excavation varies, but no information is provided. How will the constructor know how wide to remediate?
2. Drawing 8, Section B: On the left side, extend cap down to meet clay surface (see figure below):



APPENDIX B COMMENTS

Slope Stability Calculations

1. The methodology used (Simple infinite-slope model) only considers a planar slip surface that crosses the cap. Slip surfaces that cross the foundation soils are not considered.
2. The infinite-slope model is applicable when the strength properties of the material that conform the slope are greater than the strength properties of the foundation soil, is this the case at Old American Zinc?
3. The 23 degrees of friction angle is conservative for the slag mixed with soil (even when we don't know the % of slag and soil), but if the material of the consolidation cell has better strength properties than the subsurface soils, deeper slip surfaces might provide lower factors of safety.
 1. Pseudostatic analysis is not considered.
 2. Undrained case is not considered.

Stormwater Calculations

1. It looks like all flow from drainage ditch 1, 2, 3, and 5 all go into drainage ditch 4, but the flow doesn't show all of those contributions. Please provide a better explanation on how the flow routing is working, the flow mainly in ditch 4 may be undersized.
2. For the HydroCAD calculations a P2 value of 1 inch was used, but according to the NOAA precipitation frequency tabular estimates used for the 25 year and 100 year 24 hour events, they should be using 3.12 inches for the 2-year, 24 hour event to determine time of concentration and flow into the channels.
3. Provide calculations that show that the additional flow into Rose Creek do not cause flooding conditions